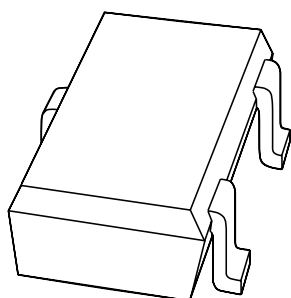


DATA SHEET



1PS70SB40 series **Schottky barrier (double) diodes**

Product specification
Supersedes data of 1997 Oct 28

1999 Apr 26

Schottky barrier (double) diodes

1PS70SB40 series

FEATURES

- Low forward voltage
- Guard ring protected
- Very small SMD package
- Low diode capacitance.

APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Blocking diodes.

DESCRIPTION

Planar Schottky barrier diodes encapsulated in an SC-70 very small plastic SMD package. Single diodes and double diodes with different pinning are available.

MARKING

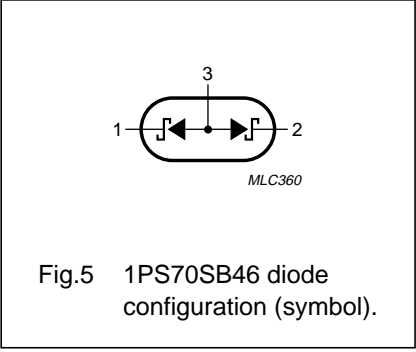
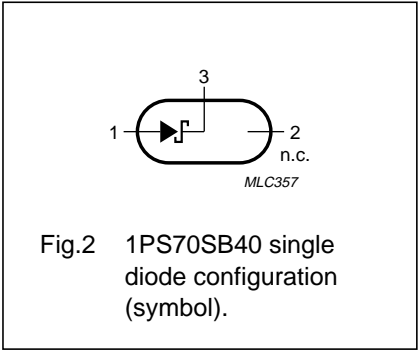
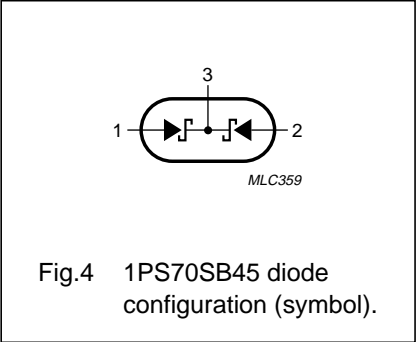
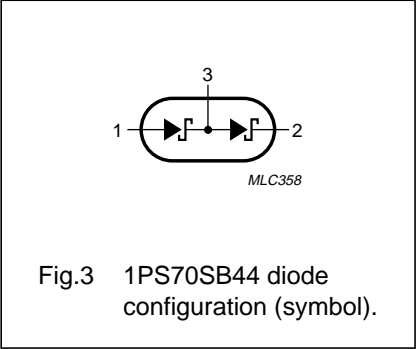
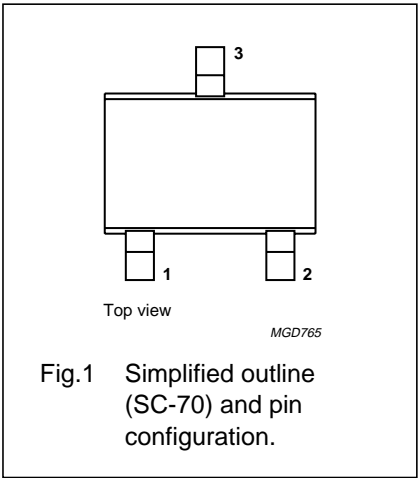
TYPE NUMBER	MARKING CODE ⁽¹⁾
1PS70SB40	6*3
1PS70SB44	6*4
1PS70SB45	6*5
1PS70SB46	6*6

Note

1. * = -: Made in Hong Kong.
* = t: Made in Malaysia.

PINNING

PIN	1PS70SB..			
	40	44	45	46
1	a ₁	a ₁	a ₁	k ₁
2	n.c.	k ₂	a ₂	k ₂
3	k ₁	k ₁ , a ₂	k ₁ , k ₂	a ₁ , a ₂



Schottky barrier (double) diodes

1PS70SB40 series

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per diode					
V_R	continuous reverse voltage		–	40	V
I_F	continuous forward current		–	120	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1$ s; $\delta \leq 0.5$	–	120	mA
I_{FSM}	non-repetitive peak forward current	$t_p < 10$ ms	–	200	mA
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

ELECTRICAL CHARACTERISTICS

$T_{amb} = 25$ °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
Per diode				
V_F	continuous forward voltage	see Fig.6 $I_F = 1$ mA $I_F = 10$ mA $I_F = 40$ mA	380 500 1	mV mV V
I_R	continuous reverse current	$V_R = 30$ V; note 1; see Fig.7	1	μA
		$V_R = 40$ V; note 1; see Fig.7	10	μA
τ	charge carrier life time	$I_F = 5$ mA; Krakauer method	100	ps
C_d	diode capacitance	$V_R = 0$; $f = 1$ MHz; see Fig.9	5	pF

Note

1. Pulse test: $t_p = 300$ μs; $\delta = 0.02$.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	625	K/W

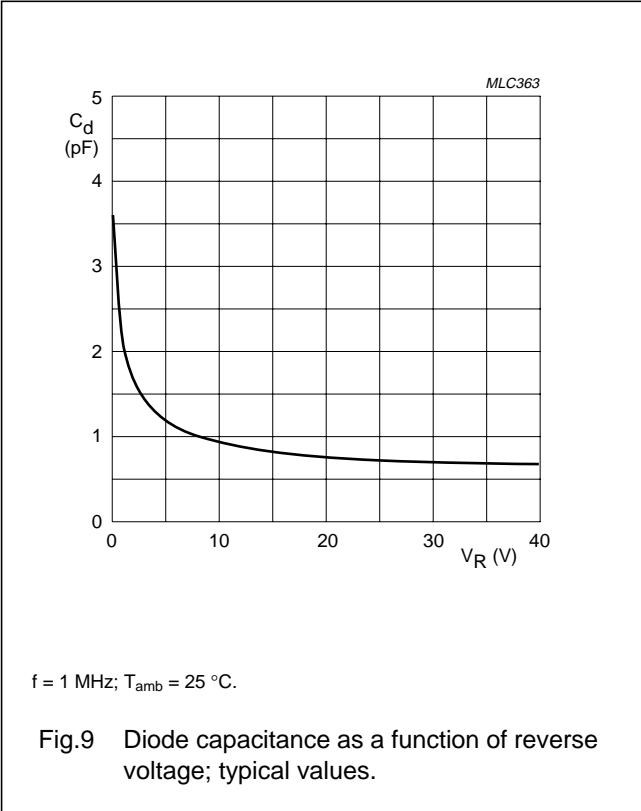
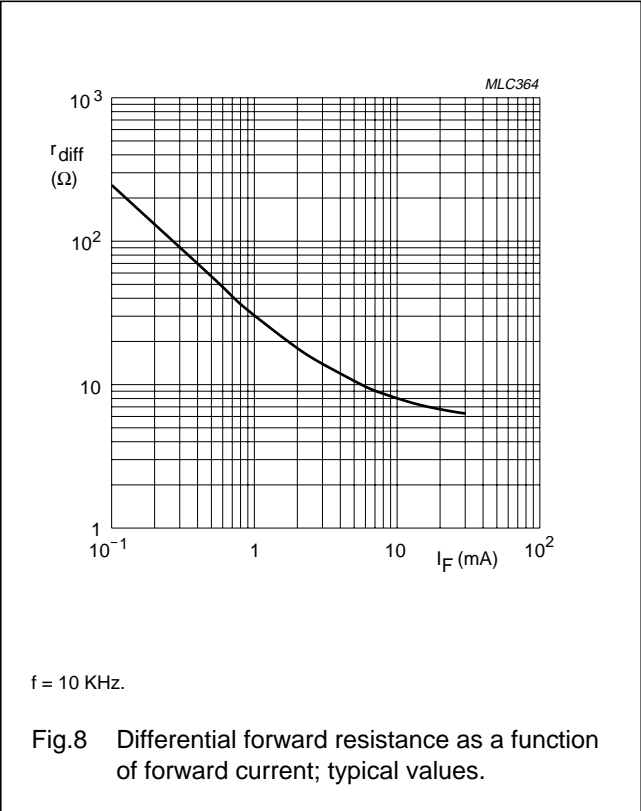
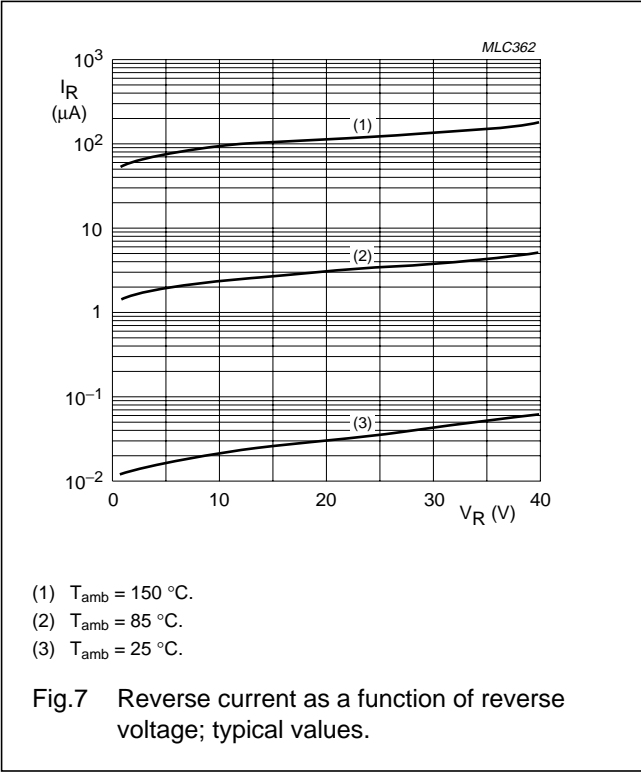
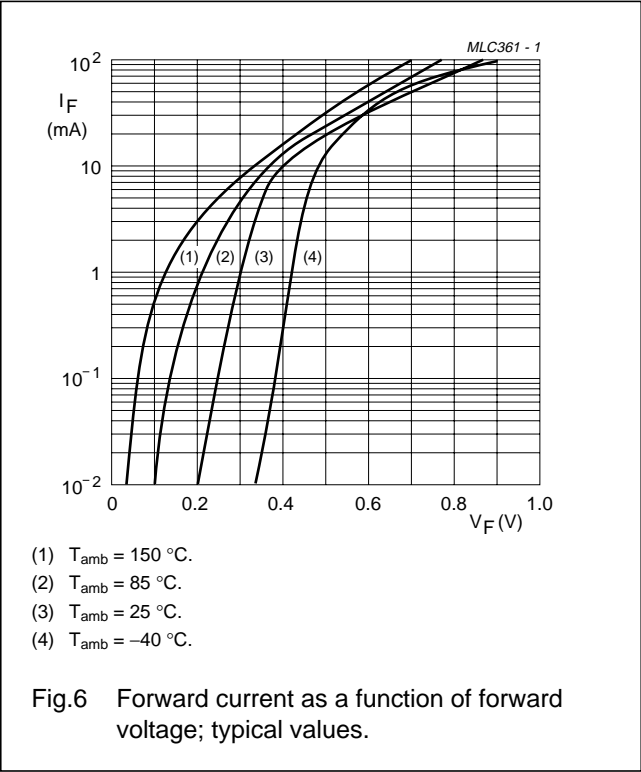
Note

1. Refer to SC70 standard mounting conditions.

Schottky barrier (double) diodes

1PS70SB40 series

GRAPHICAL DATA



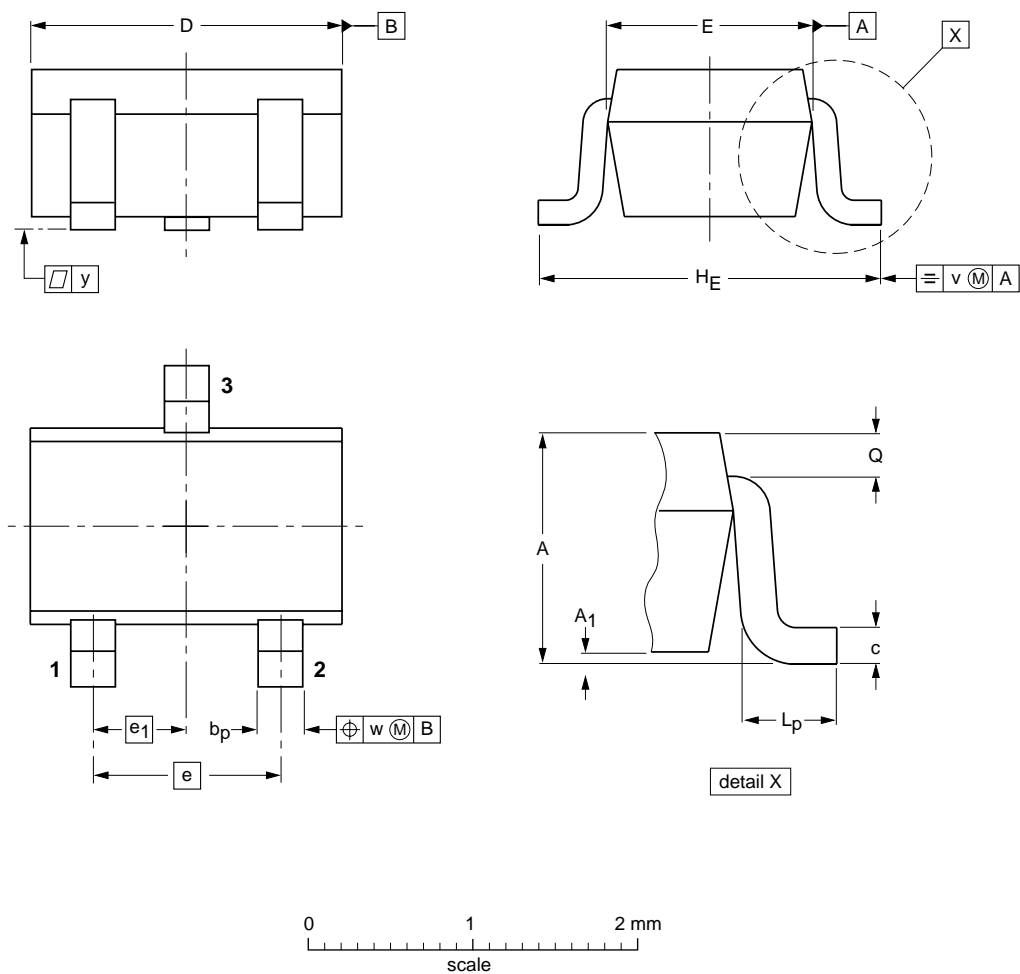
Schottky barrier (double) diodes

1PS70SB40 series

PACKAGE OUTLINE


Plastic surface mounted package; 3 leads

SOT323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT323			SC-70			97-02-28

Schottky barrier (double) diodes**1PS70SB40 series**

DEFINITIONS

Data Sheet Status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

Schottky barrier (double) diodes

1PS70SB40 series

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